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# NON-ENZYMATIC COMPONENTS OF ANTIOXIDANT DEFENSE SYSTEM IN SOME TISSUES OF RATS TREATED WITH COENZYME $Q_{10}$

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Coenzyme Q (CoQ) is present in almost all living organisms where it exhibits antioxidant properties and also represents an obligatory component of the mitochondrial respiratory chain (2). CoQ may prevent lipide peroxidation, protects DNA from oxidation and protects organism from oxidative stress induced by various toxic agents (1). The scope of our study was to investigate the concentrations of ascorbic acid (AsA) and vitamin E (Vit E) in the liver, kidneys, heart and testes, as well as CoQ concentration in the liver, kidneys and testes of male, two months old *Wistar albino* rats treated with 20 mg/kg of coenzyme $Q_{10}$ ($CoQ_{10}$) dissolved in olive oil, i.m., every fifth day, during 30 days. An average intake of $CoQ_{10}$ was 16 mg/kg/dose. All obtained results were compared with control animals (C).

Our results show that treatment with $CoQ_{10}$ induced a significant increase of AsA and Vit E concentrations in all investigated tissues. The concentration of CoQ was significantly increased only in the liver of rats treated with $CoQ_{10}$. It is well known that $CoQ_{10}$ in its reduced form ($CoQ_{10}H_2$) is the powerful antioxidant which regenerate the active form of Vit E from the Vit E radicals (tocopheroxyl radicals, Vit E·), (4), stabilized extracellular ascorbate by its NADPH-$CoQ_{10}$ reductase (3) and elevate the endogenous CoQ pool in the cells (1). At the other hand, dose and time dependent studies were shown that CoQ concentration after parenteral administration was increased only in the plasma and liver of rats (5).

It can be concluded that all obtained effects induced by $CoQ_{10}$ led to the elevated concentrations of non-enzymatic components of antioxidant defense system and increased antioxidant protection of all examined tissues.

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